

## ABSTRACT OF THE DISCLOSURE

A method of estimating an internal temperature of a vehicle battery is based on heat transfer between a heat source and the battery. In addition to the heat source, airflow generated by vehicle movement and radiator fans affects the internal temperature of the battery. The method estimates an initial internal temperature of the battery at engine startup based on how long the engine was off. The temperature of the heat source is determined. A transfer function is determined to represent the effect of the airflow. The method updates a current internal temperature of the battery based on the initial internal temperature and an integration of the transfer function and the heat source temperature.